

Amendment to the Claims:

Claims 1 – 24. Cancelled.

25. (previously presented) A method for deep cryogenic tempering of metallic brake rotors, the method comprising the steps of:

- (a) determining a mass and cross sectional area of the brake rotors;
- (b) placing the brake rotors at a temperature within a cryogenic processing chamber;
- (c) cooling the brake rotors at a descent rate, the descent rate being a function of the mass and cross sectional area of the brake rotors, until the temperature of the brake rotors is approximately -300° F, the cooling accomplished by introducing gaseous nitrogen into the cryogenic processing chamber;
- (d) maintaining the brake rotors temperature at -300° F for a stay time, the stay time being a function of the mass and the cross sectional area of the brake rotors;
- (e) raising the temperature of the brake rotors to approximately 300° F at an ascent rate, the ascent rate being a function of the mass and the cross sectional area of the brake rotors;
- (f) maintaining the temperature of the brake rotors at 300° F for a post temper time;
- (g) lowering the temperature of the brake rotors to room temperature at a cool down rate;
- (h) raising the temperature of the brake rotors to approximately 300° F at an ascent rate;

(i) maintaining the temperature of the brake rotors at 300° F for a post temper time; and

(j) lowering the temperature of the brake rotors to room temperature at a cool down rate.

26. (previously presented) The method of Claim 25, wherein steps (h), (i), and (j) are repeated for a third post temper time.

27. (previously presented) The method of Claim 26, wherein:

the temperature of the brake rotors is approximately 100 degrees F at step (b).

28. (previously presented) The method of Claim 25 further comprising the step of:

Raising the temperature of the brake rotors to approximately -100° F within the cryogenic processing chamber after step (d) and before step (e).

29. (previously presented) The method of Claim 25 further comprising the step of transporting the brake rotors to a tempering oven during step (f).

30. (canceled)